ALTO-SHAAM®

Hot Food Drop-In Wells

Electric

ecosmart™

Models:
100-HW
100-HW/D6
200-HW
200-HW/D6
300-HW
300-HW/D6
400-HW
400-HW/D6
500-HW
500-HW/D6


100-HW

pans not included


300-HW

• INSTALLATION
• OPERATION
• MAINTENANCE

HALO HEAT®

24•7 Your Service Hotline 1-800-558-8744

W164 N9221 Water Street • P.O. Box 450 • Menomonee Falls, Wisconsin 53052-0450 USA
PHONE: 262.251.3800 • 800.558.8744 USA/CANADA FAX: 262.251.7067 • 800.329.8744 U.S.A. ONLY
www.alto-shaam.com

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ALTO-SHAAM®

DELIVERY

This Alto-Shaam appliance has been thoroughly tested and inspected to insure only the highest quality unit is provided. Upon receipt, check for any possible shipping damage and report it at once to the delivering carrier. ***See Transportation Damage and Claims section located in this manual.***

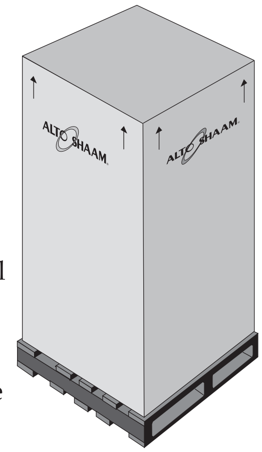
This appliance, complete with unattached items and accessories, may have been delivered in one or more packages. Check to ensure that all standard items and options have been received with each model as ordered.

Save all the information and instructions packed with the appliance. Complete and return the warranty card to the factory as soon as possible to assure prompt service in the event of a warranty parts and labor claim.

This manual must be read and understood by all people using or installing the equipment model. Contact the Alto-Shaam service department if you have any questions concerning installation, operation, or maintenance.

NOTE: All claims for warranty must include the full model number and serial number of the unit.

UNPACKING



1. Carefully remove the appliance from the carton or crate.

   NOTE: Do not discard the carton and other packaging material until you have inspected the unit for hidden damage and tested it for proper operation.

2. Read all instructions in this manual carefully before initiating the installation of this appliance.

   DO NOT DISCARD THIS MANUAL.
   This manual is considered to be part of the appliance and is to be provided to the owner or manager of the business or to the person responsible for training operators. ***Additional manuals are available from the Alto-Shaam service department.***

3. Remove all protective plastic film, packaging materials, and accessories from the appliance before connecting electrical power. Store any accessories in a convenient place for future use.

Knowledge of proper procedures is essential to the safe operation of electrically and/or gas energized equipment. In accordance with generally accepted product safety labeling guidelines for potential hazards, the following signal words and symbols may be used throughout this manual.

DANGER

Used to indicate the presence of a hazard that WILL cause severe personal injury, death, or substantial property damage if the warning included with this symbol is ignored.

WARNING

Used to indicate the presence of a hazard that CAN cause personal injury, possible death, or major property damage if the warning included with this symbol is ignored.

CAUTION

Used to indicate the presence of a hazard that can or will cause minor or moderate personal injury or property damage if the warning included with this symbol is ignored.

CAUTION

Used to indicate the presence of a hazard that can or will cause minor personal injury, property damage, or a potential unsafe practice if the warning included with this symbol is ignored.

NOTE: Used to notify personnel of installation, operation, or maintenance information that is important but not hazard related.

1. This appliance is intended to cook, hold or process foods for the purpose of human consumption. No other use for this appliance is authorized or recommended.
2. This appliance is intended for use in commercial establishments where all operators are familiar with the purpose, limitations, and associated hazards of this appliance. Operating instructions and warnings must be read and understood by all operators and users.
3. Any troubleshooting guides, component views, and parts lists included in this manual are for general reference only and are intended for use by qualified technical personnel.
4. This manual should be considered a permanent part of this appliance. This manual and all supplied instructions, diagrams, schematics, parts lists, notices, and labels must remain with the appliance if the item is sold or moved to another location.

NOTE

For equipment delivered for use in any location regulated by the following directive:

DO NOT DISPOSE OF ELECTRICAL OR ELECTRONIC EQUIPMENT WITH OTHER MUNICIPAL WASTE.

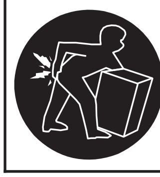
DANGER



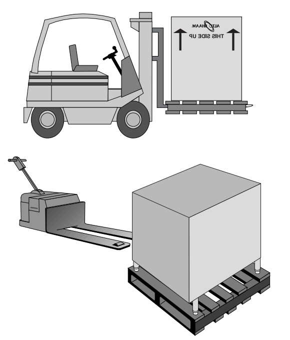
IMPROPER INSTALLATION, ALTERATION, ADJUSTMENT, SERVICE, OR MAINTENANCE COULD RESULT IN SEVERE INJURY, DEATH OR CAUSE PROPERTY DAMAGE.

READ THE INSTALLATION, OPERATING AND MAINTENANCE INSTRUCTIONS THOROUGHLY BEFORE INSTALLING OR SERVICING THIS EQUIPMENT.

CAUTION



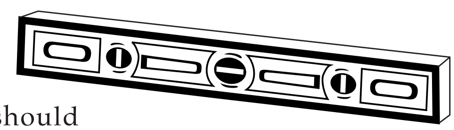
TO PREVENT PERSONAL INJURY, USE CAUTION WHEN MOVING OR LEVELING THIS APPLIANCE.



The Alto-Shaam appliance must be installed in a location that will permit the unit to function for its intended purpose and to allow for proper cleaning, and maintenance.

1. The appliance must be installed on a stable and level surface. A non-combustible, heat resistant surface is highly recommended.
2. **DO NOT** install this appliance in any area where it may be affected by any adverse conditions such as steam, grease, dripping water, high temperatures, etc.
3. The outer walls of the hot well can reach 200°F (93°C) to 260°F (127°C). Verify countertop material temperature rating with manufacturer before installing to ensure counter can withstand heat.

LEVELING



The heated well should be leveled before the electrical supply is connected. Level the appliance from side-to-side and front-to-back with the use of a spirit level. For appliances installed on a mobile stand, it is important that the floor surface be level due to the probability of frequent repositioning.

NOTE

It is important to apply a food grade silicone underneath the decor flange to seal flange to the countertop.

OPTIONS AND ACCESSORIES	
PAN DIVIDER BARS	
• FULL-SIZE	16019
• HALF-SIZE / THIRD-SIZE	11318

ROUGH CUT COUNTER TOP OPENING	
MODEL 100-HW and 100-HW/6D ONE PAN:	22-3/8" x 14-1/4" (568mm x 362mm)
MODEL 200-HW and 200-HW/6D TWO PAN:	22-3/8" x 27-1/8" (568mm x 689mm)
MODEL 300-HW and 300-HW/6D THREE PAN:	22-3/8" x 40-1/8" (568mm x 1019mm)
MODEL 400-HW and 400-HW/6D FOUR PAN:	22-3/8" x 53-1/4" (568mm x 1353mm)
MODEL 500-HW and 500-HW/6D FIVE PAN:	22-3/8" x 66-1/4" (568mm x 1683mm)

INSTALLATION

ELECTRICAL CONNECTION

1. An identification tag is permanently mounted on the appliance.

> **DANGER**
>
> **ENSURE POWER SOURCE MATCHES VOLTAGE STAMPED ON APPLIANCE NAMEPLATE.**

2. This appliance is equipped with a three-prong grounding plug. For your protection against shock hazard this appliance should be plugged directly into a properly grounded three-prong receptacle. Do not cut or remove the grounding prong from this plug. Plug the unit into a properly grounded receptacle ONLY, positioning the unit so that the plug is easily accessible in case of an emergency. Arcing will occur when connecting or disconnecting the unit unless all controls are in the “OFF” position.

3. Proper receptacle or outlet configuration or permanent wiring for this unit must be installed by a licensed electrician in accordance with applicable local electrical codes.

4. For 230V units:
To prevent an electrical shock hazard between the appliance and other appliances or metal parts in close vicinity, an equalization-bonding stud is provided. An equalization bonding lead must be connected to this stud and the other appliances / metal parts to provide sufficient protection against potential difference. The terminal is marked with the following symbol.

NOTE: The appliance must be connected to an electrical circuit that is protected by an external GFCI outlet.

> **DANGER**
>
> **ELECTRICAL CONNECTIONS MUST BE MADE BY A QUALIFIED SERVICE TECHNICIAN IN ACCORDANCE WITH APPLICABLE ELECTRICAL CODES.**

> **DANGER**
>
> **To avoid electrical shock, this appliance MUST be adequately grounded in accordance with local electrical codes or, in the absence of local codes, with the current edition of the National Electrical Code ANSI/NFPA No. 70. In Canada, all electrical connections are to be made in according with CSA C22.1, Canadian Electrical Code Part 1 or local codes.**

INSTALLATION

ELECTRICAL SPECIFICATIONS

ELECTRICAL • 100-HW & 100-HW/D6						
VOLTAGE	PHASE	CYCLE/ HZ	AMPS	kW	PLUG CONFIGURATION	
120 (AGCY)	1	60	4.8	0.58	NEMA 5-15P	15A-125V PLUG

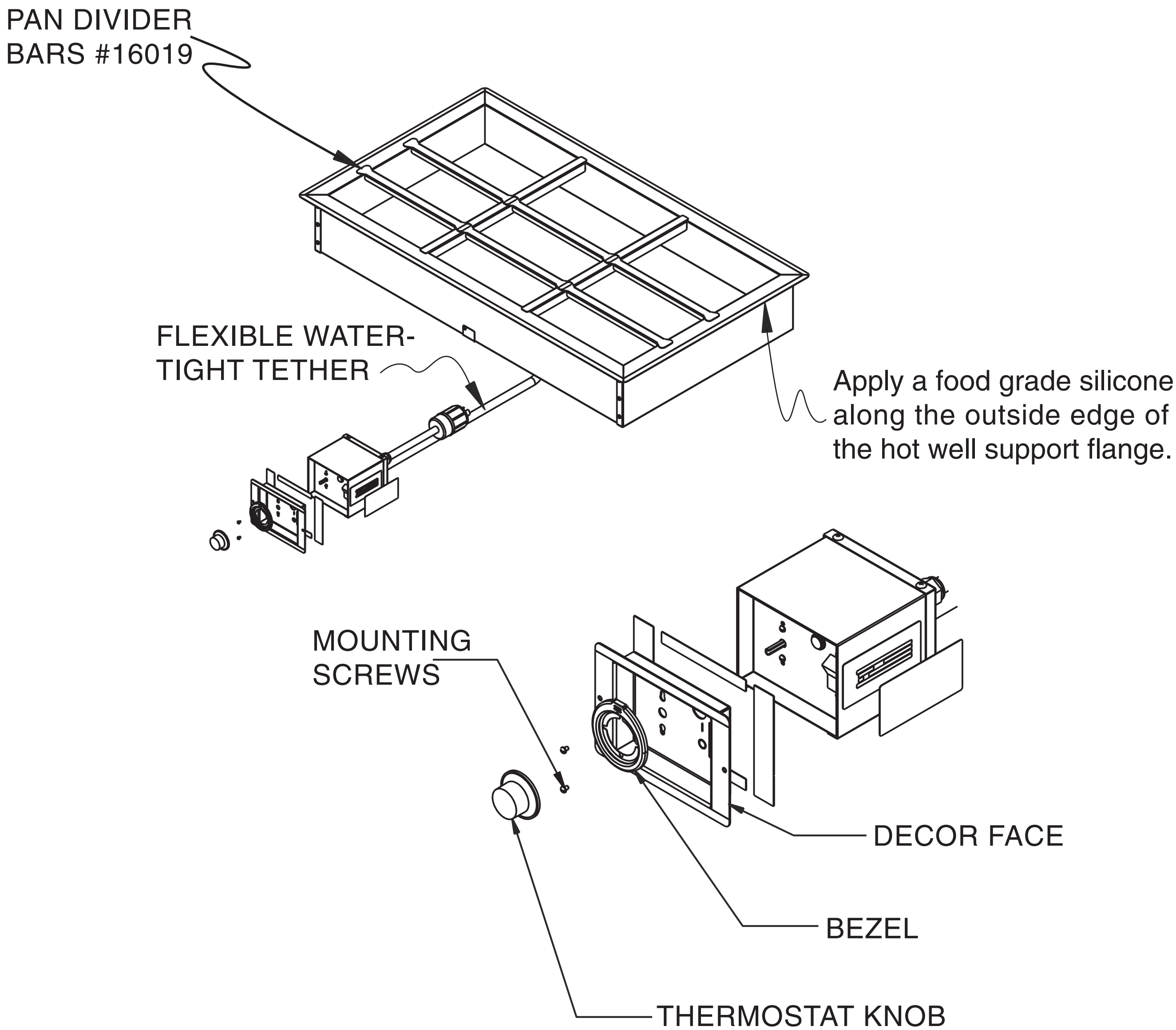
ELECTRICAL • 200-HW & 200-HW/D6						
VOLTAGE	PHASE	CYCLE/ HZ	AMPS	kW	PLUG CONFIGURATION	
120 (AGCY)	1	60	10.6	1.27	NEMA 5-15P	15A-125V PLUG
240 (AGCY)	1	60	5.3	1.27		
at 208	1	50/60	4.6	0.95	NEMA 6-15P	15A-250V PLUG
at 240	1	50/60	5.3	1.27		
230 (AGCY)	1	50/60	5.1	1.17	CEE 7/7	220-230V PLUG

ELECTRICAL • 300-HW & 300-HW/D6						
VOLTAGE	PHASE	CYCLE/ HZ	AMPS	kW	PLUG CONFIGURATION	
120 (AGCY)	1	60	21.4	2.57	NEMA L5-30P	30A-125V PLUG
240 (AGCY)	1	60	10.7	2.57		
at 208	1	50/60	9.2	1.93		
at 240	1	50/60	10.7	2.57	NEMA 6-15P	15A-250V PLUG
230 (AGCY)	1	60	10.3	2.36	CEE 7/7	220-230V PLUG

ELECTRICAL • 400-HW & 400-HW/D6						
VOLTAGE	PHASE	CYCLE/ HZ	AMPS	kW	PLUG CONFIGURATION	
120 (AGCY)	1	60	19.7	2.36	NEMA L5-30P	30A-125V PLUG
240 (AGCY)	1	60	9.9	2.38		
at 208	1	60	8.5	1.77		
at 240	1	60	9.8	2.36	NEMA 6-15P	15A-250V PLUG
230 (AGCY)	1	50/60	9.5	2.19	CEE 7/7	220-230V PLUG

ELECTRICAL • 500-HW & 500-HW/D6						
VOLTAGE	PHASE	CYCLE/ HZ	AMPS	kW	PLUG CONFIGURATION	
120	1	60	20.0	2.39	NEMA L5-30P	30A-125V PLUG
240 (AGCY)	1	60	10.0	2.39		
at 208	1	60	8.6	1.80	NEMA 6-15P	15A-250V PLUG
at 240	1	60	10.0	2.39		
230	1	50/60	9.5	2.20	CEE 7/7	220-230V PLUG

100-HW, 200-HW & 300-HW REMOTE CONTROL HOUSING MOUNTING INSTRUCTIONS

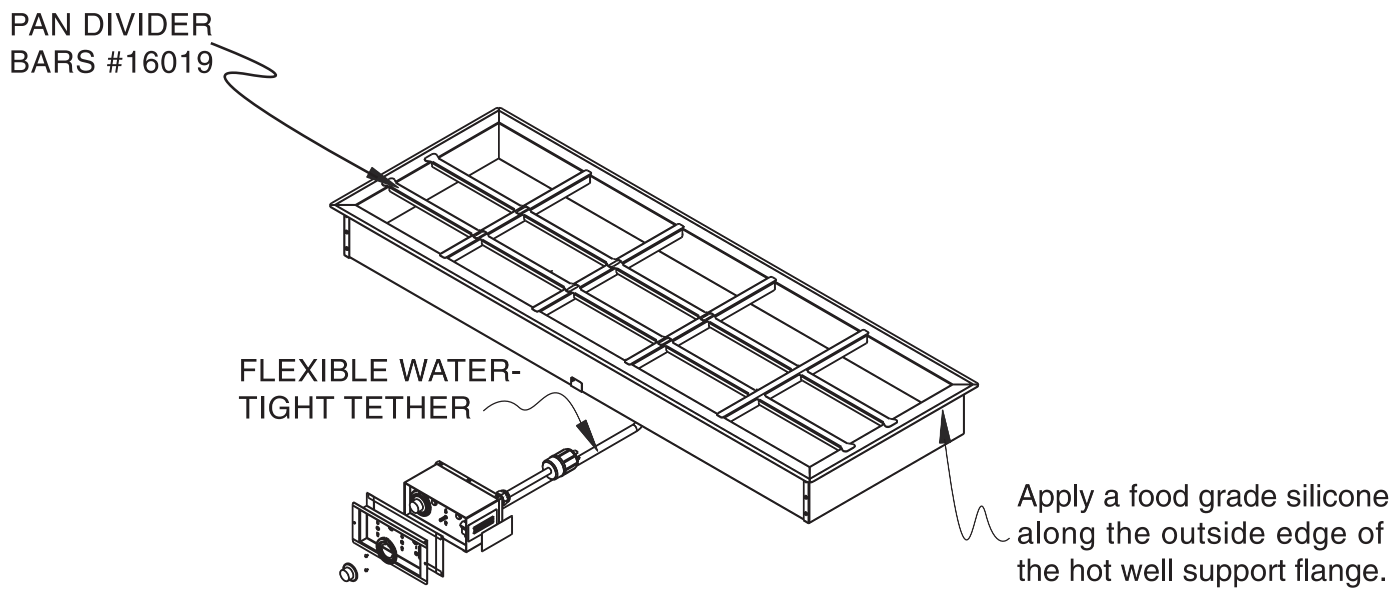


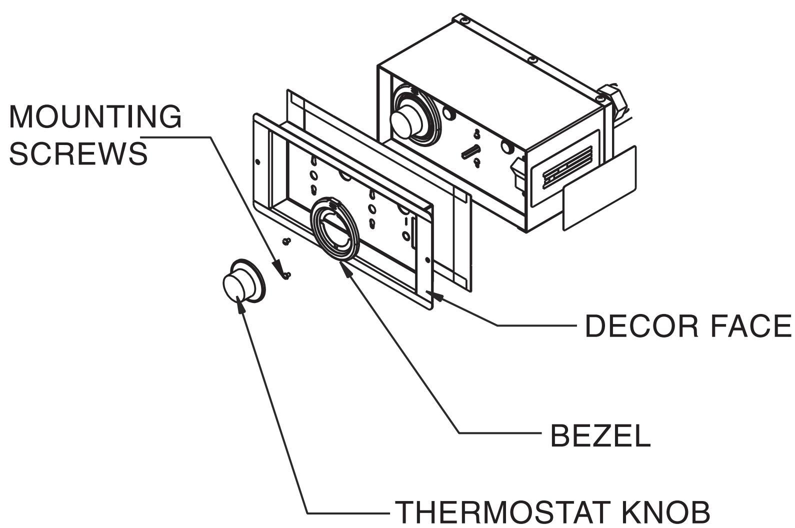
1. Cut a 5-1/4" x 4-1/2" (133.4mm x 114.3mm) opening in the location where the control is to be positioned.
2. Thoroughly clean and dry the mounting surface around the control cut-out opening on which the decor face will be applied.

   NOTE: The control face will not properly adhere to an unclean surface.
3. Remove the protective film from the mounting tape on the inside flanges of the decor face and apply the decor face to the mounting surface.
4. Position the remote control housing behind the decor face. Use the two (2) mounting screws through the thermostat bezel of the decor face to fasten the decor face to the control housing.
5. Insert the thermostat knob(s) onto the thermostat shaft(s).

INSTALLATION

400-HW & 500-HW REMOTE CONTROL HOUSING MOUNTING INSTRUCTIONS





1. Cut a 9" x 4-1/2" (228.6mm x 114.3mm) opening in the location where the control is to be positioned.

2. Thoroughly clean and dry the mounting surface around the control cut-out opening on which the decor face will be applied.

NOTE: The control face will not properly adhere to an unclean surface.

3. Remove the protective film from the mounting tape on the inside flanges of the decor face and apply the decor face to the mounting surface.

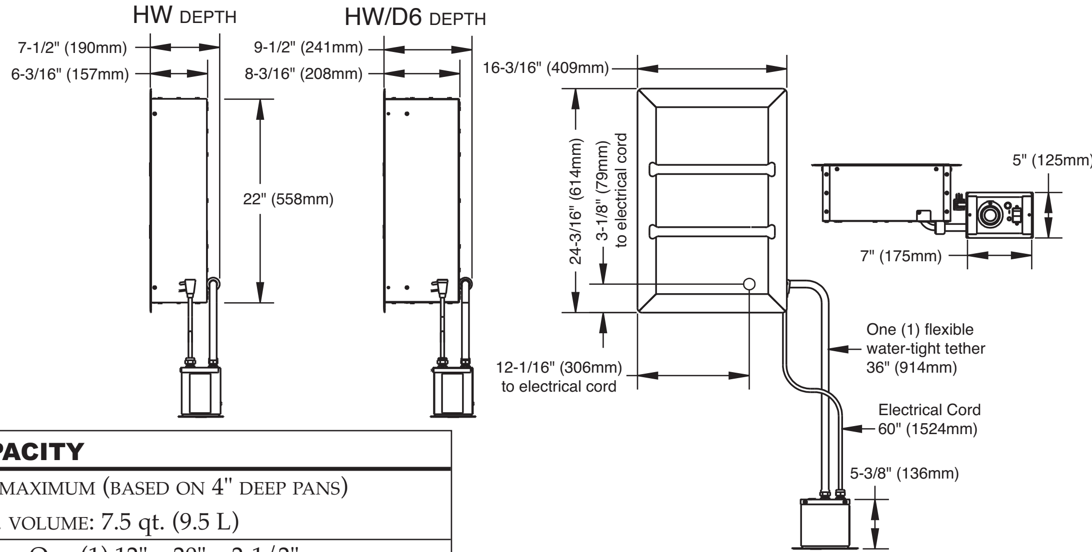
4. Position the remote control housing behind the decor face. Use the two (2) mounting screws through the thermostat bezel of the decor face to fasten the decor face to the control housing.

5. Insert the thermostat knob(s) onto the thermostat shaft(s).

INSTALLATION

DIMENSIONS • CAPACITY

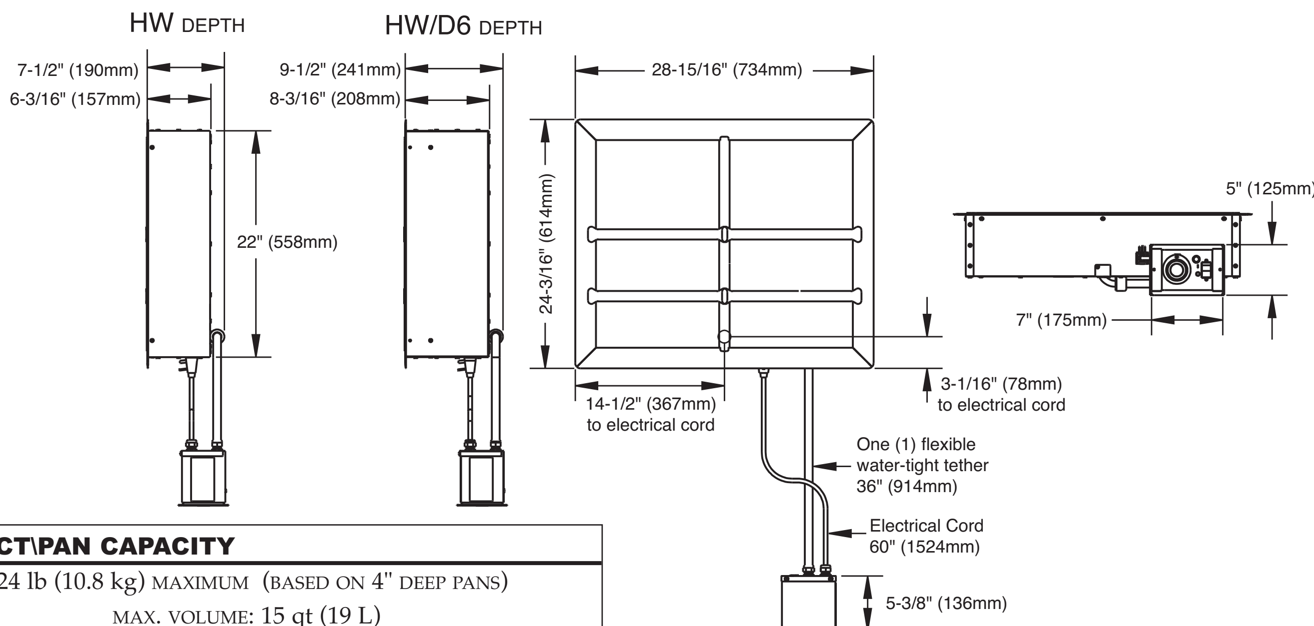
100-HW



PRODUCT\PAN CAPACITY	
12 lb (5.4 kg) MAXIMUM (BASED ON 4" DEEP PANS)	
MAX. VOLUME: 7.5 qt. (9.5 L)	
FULL-SIZE PANS*:	One (1) 12" x 20" x 2-1/2" GN 1/1 (325mm x 530mm x 65mm)
HALF-SIZE PANS*:	Two (2) 12" x 10" x 2-1/2" GN 1/2 (325mm x 265mm x 65mm)
THIRD-SIZE PANS*:	Three (3) 12" x 6" x 2-1/2" GN 1/3 (325mm x 176mm x 65mm)

*WILL ALSO ACCEPT 4" (100mm) DEEP PANS; D6 UNITS WILL ACCEPT 6" (153mm) DEEP PANS

200-HW



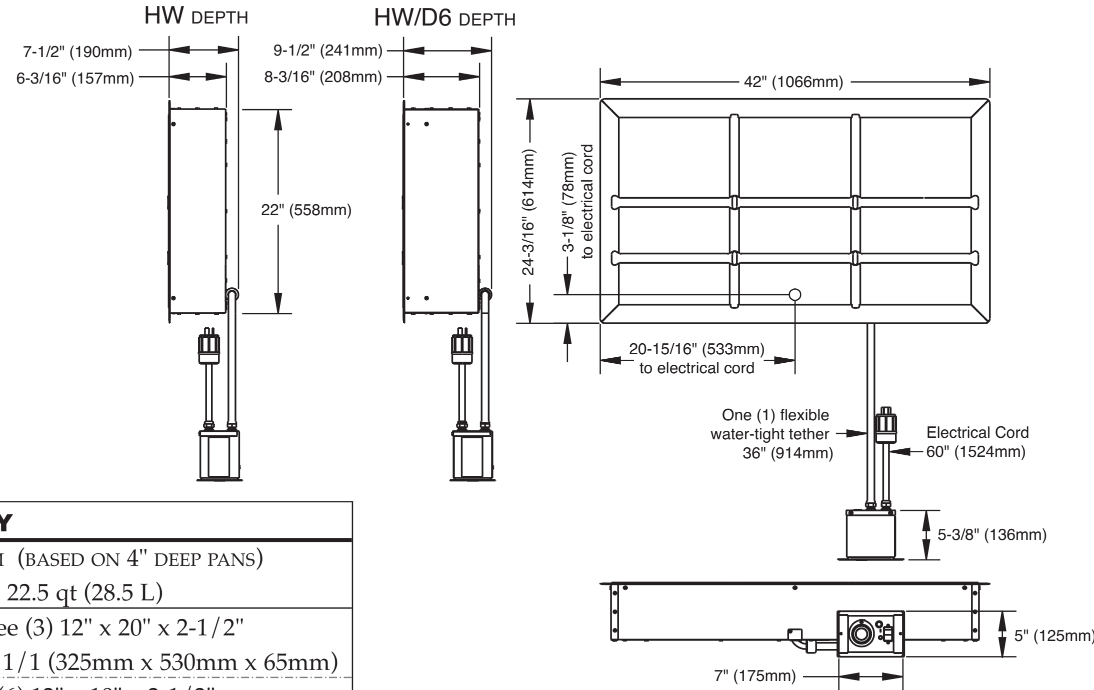
PRODUCT\PAN CAPACITY	
24 lb (10.8 kg) MAXIMUM (BASED ON 4" DEEP PANS)	
MAX. VOLUME: 15 qt (19 L)	
FULL-SIZE PANS*:	Two (2) 12" x 20" x 2-1/2" GN 1/1 (325mm x 530mm x 65mm)
HALF-SIZE PANS*:	Four (4) 12" x 10" x 2-1/2" GN 1/2 (325mm x 265mm x 65mm)
THIRD-SIZE PANS*:	Six (6) 12" x 6" x 2-1/2" GN 1/3 (325mm x 176mm x 65mm)

*WILL ALSO ACCEPT 4" (100mm) DEEP PANS; D6 UNITS WILL ACCEPT 6" (153mm) DEEP PANS

INSTALLATION

DIMENSIONS • CAPACITY

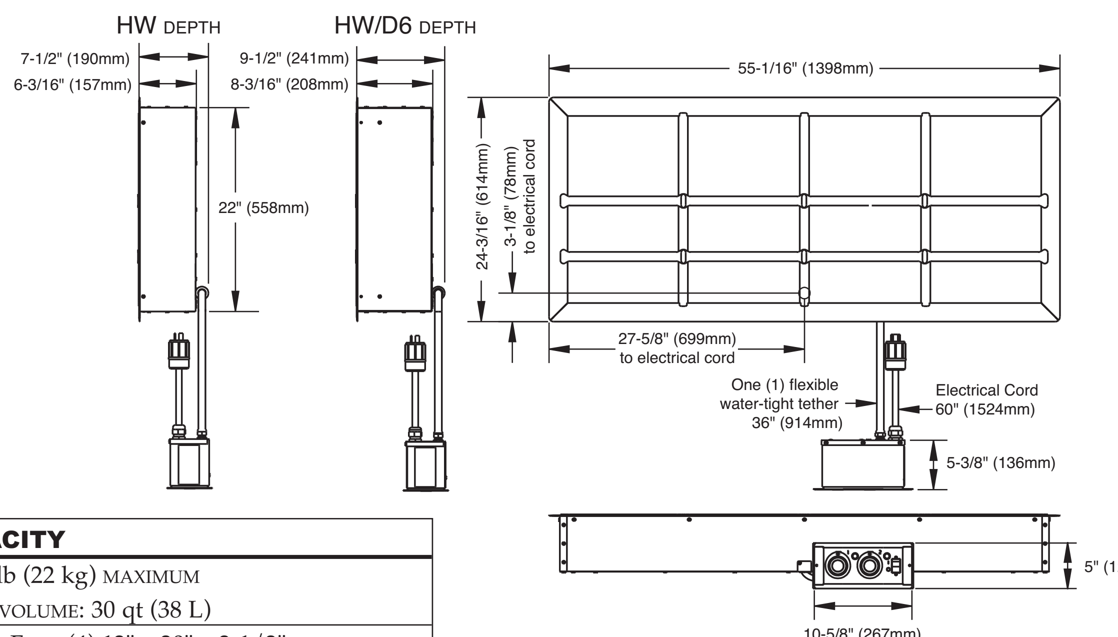
300-HW



PRODUCT\PAN CAPACITY	
36 lb (16 kg) MAXIMUM (BASED ON 4" DEEP PANS)	
MAX. VOLUME: 22.5 qt (28.5 L)	
FULL-SIZE PANS*:	Three (3) 12" x 20" x 2-1/2" GN 1/1 (325mm x 530mm x 65mm)
HALF-SIZE PANS*:	Six (6) 12" x 10" x 2-1/2" GN 1/2 (325mm x 265mm x 65mm)
THIRD-SIZE PANS*:	Nine (9) 12" x 6" x 2-1/2" GN 1/3 (325mm x 176mm x 65mm)

*WILL ALSO ACCEPT 4" (100mm) DEEP PANS; D6 UNITS WILL ACCEPT 6" (153mm) DEEP PANS

400-HW



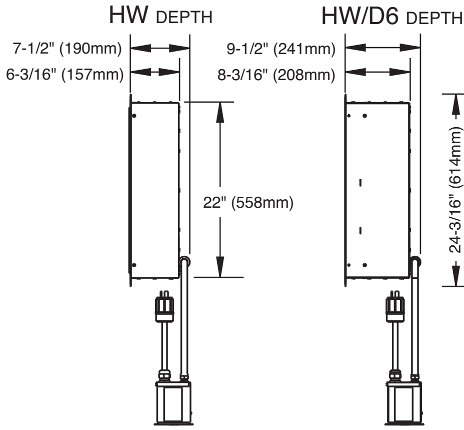
PRODUCT\PAN CAPACITY	
48 lb (22 kg) MAXIMUM	
MAX. VOLUME: 30 qt (38 L)	
FULL-SIZE PANS*:	Four (4) 12" x 20" x 2-1/2" GN 1/1 (325mm x 530mm x 65mm)
HALF-SIZE PANS*:	Eight (8) 12" x 10" x 2-1/2" GN 1/2 (325mm x 265mm x 65mm)
THIRD-SIZE PANS*:	Twelve (12) 12" x 6" x 2-1/2" GN 1/3 (325mm x 176mm x 65mm)

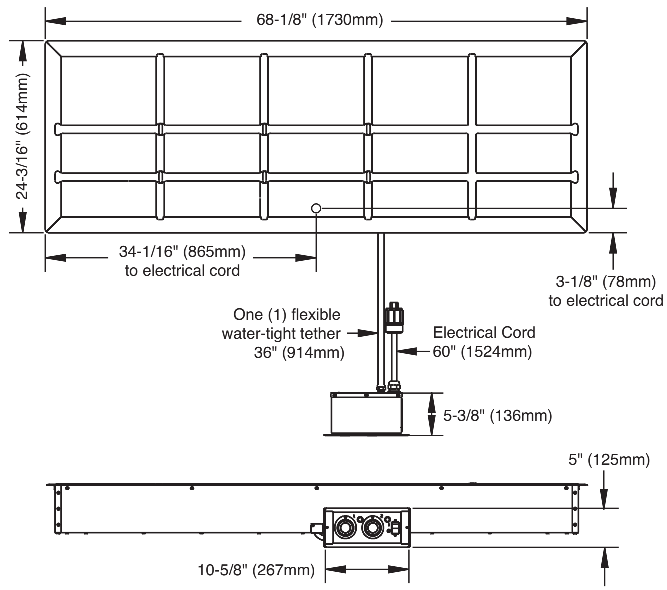
*WILL ALSO ACCEPT 4" (100mm) DEEP PANS; D6 UNITS WILL ACCEPT 6" (153mm) DEEP PANS

INSTALLATION

DIMENSIONS * CAPACITY

500-HW





PRODUCT\PAN CAPACITY	
60 lb (27 kg) MAXIMUM (BASED ON 4" DEEP PANS)	
MAX. VOLUME: 37.5 qt (47.5 L)	
FULL-SIZE PANS*:	Five (5) 12" x 20" x 2-1/2" GN 1/1 (325mm x 530mm x 65mm)
HALF-SIZE PANS*:	Ten (10) 12" x 10" x 2-1/2" GN 1/2 (325mm x 265mm x 65mm)
THIRD-SIZE PANS*:	Fifteen (15) 12" x 6" x 2-1/2" GN 1/3 (325mm x 176mm x 65mm)

*WILL ALSO ACCEPT 4" (100mm) DEEP PANS; D6 UNITS WILL ACCEPT 6" (153mm) DEEP PANS

OPERATING INSTRUCTIONS

1. DO NOT ADD WATER TO HOT WELL

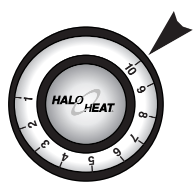
Halo Heat® hot wells maintain a constant and gentle temperature. **Adding water is not recommended** since water will accelerate the deterioration of the product and may damage the unit voiding the warranty.

2. PLACE PAN DIVIDERS AND EMPTY PANS IN THE WELLS

NOTE: No matter what type of pan configuration chosen, pan separator bars or divider bars must be used to close all gaps between pans, and all gaps between the pans and the edges of the wells. If these gaps are not closed, heat will escape, heat distribution will be uneven, and uniform temperature will be difficult to maintain. **This is a VERY important requirement to follow whenever this appliance is in use.**

3. PREHEAT AT THE NUMBER "10" SETTING FOR A MINIMUM OF 30 MINUTES

An indicator light will illuminate when the thermostat(s) is (are) turned "**ON**." The indicator(s) will remain lit as long as the unit is preheating or calling for heat. The unit should be preheated at the **10** setting for a minimum of **30 minutes** before loading the unit with hot food. When preheating is completed, or whenever the unit reaches any temperature set by the operator between **1** and **10**, the indicator light(s) will go "**OUT**".

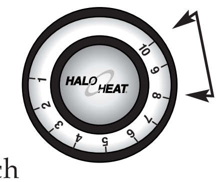


4. LOAD HOT FOODS INTO THE APPLIANCE

After preheating, place hot foods into the preheated pans located in the appliance or exchange the pans with pre-filled product pans. This appliance is designed for the purpose of hot food holding. Only hot foods should be placed into the unit. All pan divider bars required must be utilized at all times with the pan configuration chosen. Before loading food into the unit, use a pocket-type thermometer to make certain all products have reached an internal temperature of 140° to 180° F (60° to 82°C). If any food product is not at proper serving temperature, use a Halo Heat cooking and holding oven, set at 250° to 275°F (121° to 135°C), or a Combitherm oven to bring the product within the correct temperature range.

5. RESET THERMOSTAT(S) AS NEEDED

After all products are loaded into the unit, it is necessary to reset the thermostat(s). Since proper temperature range depends on the type of products and the quantities being held, it is necessary to periodically use a pocket thermometer to check each item to make certain the correct temperatures are being maintained. Proper temperature range is between a minimum of 140° and 180° F (60° and 82° C). Normally, this will require a thermostat setting of between number "**8**" and "**10**."



6. TO MAINTAIN PROPER FOOD TEMPERATURE, OVERHEAD HEATING IS REQUIRED.

CAUTION



METAL PARTS OF THIS EQUIPMENT BECOME EXTREMELY HOT WHEN IN OPERATION. TO AVOID BURNS, ALWAYS USE HAND PROTECTION WHEN OPERATING THIS APPLIANCE.

6. SERVE FRESH HOT FOOD

Keep hot foods looking fresh. Occasionally stir or rotate food as needed. Wipe spills immediately to assure maximum eye appeal and to ease end of the day cleanup.

GENERAL HOLDING GUIDELINES

Chefs, cooks and other specialized food service personnel employ varied methods of cooking. Proper holding temperatures for a specific food product must be based on the moisture content of the product, product density, volume, and proper serving temperatures. Safe holding temperatures must also be correlated with palatability in determining the length of holding time for a specific product.

Halo Heat maintains the maximum amount of product moisture content without the addition of water, water vapor, or steam. Maintaining maximum natural product moisture preserves the natural flavor of the product and provides a more genuine taste. In addition to product moisture retention, the gentle properties of Halo Heat maintain a consistent temperature throughout the cabinet without the necessity of a heat distribution fan, thereby preventing further moisture loss due to evaporation or dehydration.

When product is removed from a high temperature cooking environment for immediate transfer into equipment with the lower temperature required for hot food holding, condensation can form on the outside of the product and on the inside of plastic containers used in self-service applications. Allowing the product to release the initial steam and heat produced by high temperature cooking can alleviate this condition. To preserve the safety and quality of freshly cooked foods however, a maximum of 1 to 2 minutes must be the only time period allowed for the initial heat to be released from the product.

Most Halo Heat holding equipment is provided with a thermostat control between 60° and 200°F (16° to 93°C). If the unit is equipped with vents, close the vents for moist holding and open the vents for crisp holding.

If the unit is equipped with a thermostat indicating a range of between 1 and 10, use a metal-stemmed indicating thermometer to measure the internal temperature of the product(s) being held. Adjust the thermostat setting to achieve the best overall setting based on internal product temperature.

HOLDING TEMPERATURE RANGE

MEAT	FAHRENHEIT	CELSIUS
BEEF ROAST — Rare	130°F	54°C
BEEF ROAST — Med/Well Done	155°F	68°C
BEEF BRISKET	160° — 175°F	71° — 79°C
CORN BEEF	160° — 175°F	71° — 79°C
PASTRAMI	160° — 175°F	71° — 79°C
PRIME RIB — Rare	130°F	54°C
STEAKS — Broiled/Fried	140° — 160°F	60° — 71°C
RIBS — Beef or Pork	160°F	71°C
VEAL	160° — 175°F	71° — 79°C
HAM	160° — 175°F	71° — 79°C
PORK	160° — 175°F	71° — 79°C
LAMB	160° — 175°F	71° — 79°C
POULTRY		
CHICKEN — Fried/Baked	160° — 175°F	71° — 79°C
DUCK	160° — 175°F	71° — 79°C
TURKEY	160° — 175°F	71° — 79°C
GENERAL	160° — 175°F	71° — 79°C
FISH/SEAFOOD		
FISH — Baked/Fried	160° — 175°F	71° — 79°C
LOBSTER	160° — 175°F	71° — 79°C
SHRIMP — Fried	160° — 175°F	71° — 79°C
BAKED GOODS		
BREADS/ROLLS	120° — 140°F	49° — 60°C
MISCELLANEOUS		
CASSEROLES	160° — 175°F	71° — 79°C
DOUGH — Proofing	80° — 100°F	27° — 38°C
EGGS —Fried	150° — 160°F	66° — 71°C
FROZEN ENTREES	160° — 175°F	71° — 79°C
HORS D'OEUVRES	160° — 180°F	71° — 82°C
PASTA	160° — 180°F	71° — 82°C
PIZZA	160° — 180°F	71° — 82°C
POTATOES	180°F	82°C
PLATED MEALS	140° — 165°F	60°— 74°C
SAUCES	140° — 200°F	60° — 93°C
SOUP	140° — 200°F	60° — 93°C
VEGETABLES	160° — 175°F	71° — 79°C

THE HOLDING TEMPERATURES LISTED ARE SUGGESTED GUIDELINES ONLY. ALL FOOD HOLDING SHOULD BE BASED ON INTERNAL PRODUCT TEMPERATURES. ALWAYS FOLLOW LOCAL HEALTH (HYGIENE) REGULATIONS FOR ALL INTERNAL TEMPERATURE REQUIREMENTS.

PROTECTING STAINLESS STEEL SURFACES



It is important to guard against corrosion in the care of stainless steel surfaces. Harsh, corrosive, or inappropriate chemicals can completely destroy the protective surface layer of stainless steel. Abrasive pads, steel wool, or metal implements will abrade surfaces causing damage to this protective coating and will eventually result in areas of corrosion. Even water, particularly hard water that contains high to moderate concentrations of chloride, will cause oxidation and pitting that result in rust and corrosion. In addition, many acidic foods spilled and left to remain on metal surfaces are contributing factors that will corrode surfaces.

Proper cleaning agents, materials, and methods are vital to maintaining the appearance and life of this appliance. Spilled foods should be removed and the area wiped as soon as possible but at the very least, a minimum of once a day. Always thoroughly rinse surfaces after using a cleaning agent and wipe standing water as quickly as possible after rinsing.

CLEANING AGENTS

Use non-abrasive cleaning products designed for use on stainless steel surfaces. Cleaning agents must be chloride-free compounds and must not contain quaternary salts. Never use hydrochloric acid (muriatic acid) on stainless steel surfaces. Always use the proper cleaning agent at the manufacturer's recommended strength. Contact your local cleaning supplier for product recommendations.

CLEANING MATERIALS

The cleaning function can usually be accomplished with the proper cleaning agent and a soft, clean cloth. When more aggressive methods must be employed, use a non-abrasive scouring pad on difficult areas and make certain to scrub with the visible grain of surface metal to avoid surface scratches. Never use wire brushes, metal scouring pads, or scrapers to remove food residue.

⚠ CAUTION



TO PROTECT STAINLESS STEEL SURFACES, COMPLETELY AVOID THE USE OF ABRASIVE CLEANING COMPOUNDS, CHLORIDE BASED CLEANERS, OR CLEANERS CONTAINING QUATERNARY SALTS. NEVER USE HYDROCHLORIC ACID (MURIATIC ACID) ON STAINLESS STEEL. NEVER USE WIRE BRUSHES, METAL SCOURING PADS OR SCRAPERS.

CARE AND CLEANING



The cleanliness and appearance of this appliance will contribute considerably to operating efficiency and savory, appetizing food. Good equipment kept clean works better and lasts longer.

DANGER



DISCONNECT UNIT FROM POWER SOURCE BEFORE CLEANING OR SERVICING.

NOTE: Always allow the appliance to cool before cleaning.

CLEAN THE APPLIANCE DAILY.

DANGER



AT NO TIME SHOULD THE INTERIOR OR EXTERIOR BE STEAM CLEANED, HOSED DOWN, OR FLOODED WITH WATER OR LIQUID SOLUTION OF ANY KIND. DO NOT USE WATER JET TO CLEAN.

SEVERE DAMAGE OR ELECTRICAL HAZARD COULD RESULT.

WARRANTY BECOMES VOID IF APPLIANCE IS FLOODED

NOTE: Completely avoid the use of abrasive cleaning compounds, chloride-based cleaners, or cleaners containing quaternary salts. To protect metal finish on stainless steel, never use hydrochloric acid (muriatic acid).



INTERIOR:

1. Disconnect appliance from the power source. Let unit cool.
2. After the appliance has cooled, remove all detachable items such as pans and divider bars. Clean these items separately.
3. Remove any food scraps.
4. Wipe the interior metal surfaces with a paper towel to remove any remaining food debris.
5. Clean interior with a damp cloth or sponge and any good commercial detergent at the recommended strength.
6. For baked-on food deposits, use a non-caustic and non-toxic commercial oven cleaner appropriate for the interior surface. Follow the product manufacturer's instructions carefully for the use of this product. Any commercial oven cleaner must be approved for use on food contact areas. Remove soil with the use of a plastic scouring pad.
7. Rinse surfaces by wiping with a clean cloth or sponge and clean warm water.
8. Remove excess water with a sponge and wipe dry with a clean cloth or air dry. Leave area open until interior is completely dry. Replace divider bars and pans.
9. Interior can be wiped with a sanitizing solution after cleaning and rinsing. This solution must be approved for use on stainless steel food contact surfaces.

DO NOT USE ABRASIVE CLEANING COMPOUNDS.

Always follow appropriate state or local health (hygiene) regulations regarding all applicable cleaning and sanitation requirements for food service equipment.

SANITATION

Food flavor and aroma are usually so closely related that it is difficult, if not impossible, to separate them. There is also an important, inseparable relationship between cleanliness and food flavor. Cleanliness, top operating efficiency, and appearance of equipment contribute considerably to savory, appetizing foods. Good equipment that is kept clean, works better and lasts longer.

Most food imparts its own particular aroma and many foods also absorb existing odors. Unfortunately, during this absorption, there is no distinction between GOOD and BAD odors. The majority of objectionable flavors and odors troubling food service operations are caused by bacteria growth. Sourness, rancidity, mustiness, stale or other OFF flavors are usually the result of germ activity.

The easiest way to insure full, natural food flavor is through comprehensive cleanliness. This means good control of both visible soil (dirt) and invisible soil (germs). A thorough approach to sanitation will provide essential cleanliness. It will assure an attractive appearance of equipment, along with maximum efficiency and utility. More importantly, a good sanitation program provides one of the key elements in the prevention of food-borne illnesses.

A controlled holding environment for prepared foods is just one of the important factors involved in the prevention of food-borne illnesses. Temperature monitoring and control during receiving, storage, preparation, and the service of foods are of equal importance.

The most accurate method of measuring safe temperatures of both hot and cold foods is by internal product temperature. A quality thermometer is an effective tool for this purpose, and should be routinely used on all products that require holding at a specific temperature.

A comprehensive sanitation program should focus on the training of staff in basic sanitation procedures. This includes personal hygiene, proper handling of raw foods, cooking to a safe internal product temperature, and the routine monitoring of internal temperatures from receiving through service.

Most food-borne illnesses can be prevented through proper temperature control and a comprehensive program of sanitation. Both these factors are important to build quality service as the foundation of customer satisfaction. Safe food handling practices to prevent food-borne illness is of critical importance to the health and safety of your customers.

HACCP, an acronym for Hazard Analysis (at) Critical Control Points, is a quality control program of operating procedures to assure food integrity, quality, and safety. Taking steps necessary to augment food safety practices are both cost effective and relatively simple. While HACCP guidelines go far beyond the scope of this manual, additional information is available by contacting:

CENTER FOR FOOD SAFETY AND APPLIED NUTRITION FOOD AND DRUG ADMINISTRATION
1-888-SAFEFOOD

INTERNAL FOOD PRODUCT TEMPERATURES		
HOT FOODS		
DANGER ZONE	40° TO 140°F	(4° TO 60°C)
CRITICAL ZONE	70° TO 120°F	(21° TO 49°C)
SAFE ZONE	140° TO 165°F	(60° TO 74°C)
COLD FOODS		
DANGER ZONE	ABOVE 40°F	(ABOVE 4°C)
SAFE ZONE	36°F TO 40°F	(2°C TO 4°C)
FROZEN FOODS		
DANGER ZONE	ABOVE 32°F	(ABOVE 0°C)
CRITICAL ZONE	0° TO 32°F	(-18° TO 0°C)
SAFE ZONE	0°F or below	(-18°C or below)

CAUTION

THIS SECTION IS PROVIDED FOR THE ASSISTANCE OF QUALIFIED SERVICE TECHNICIANS ONLY AND IS NOT INTENDED FOR USE BY UNTRAINED OR UNAUTHORIZED SERVICE PERSONNEL.

⚠ DANGER

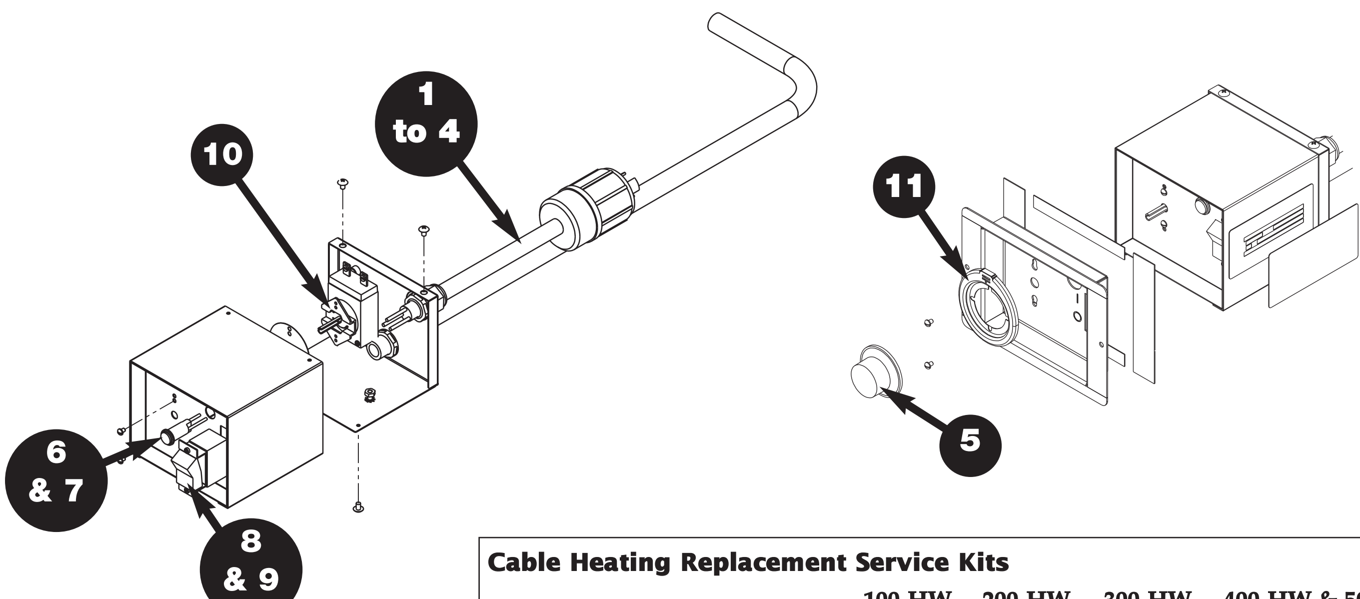
DISCONNECT UNIT FROM POWER SOURCE BEFORE CLEANING OR SERVICING.

THERMOSTAT and HEAT LIGHT SEQUENCE

Whenever the thermostat is turned **"10,"** the heat indicator light will indicate the power **ON/OFF** condition of the heating cable, and consequently, the cycling of the appliance as it maintains the dialed temperature. If the light does not illuminate after normal start-up, the main power source, thermostat, and/or light must be checked. If the appliance does not hold the temperature as dialed, the calibration of the thermostat must be checked. If the appliance fails to heat or heats continuously with the thermostat **"OFF,"** the thermostat must be initially checked for proper operation. If these items are checked and found to be in order, a continuity and resistance check of the heating cable should be made.
SEE CIRCUIT DIAGRAM.

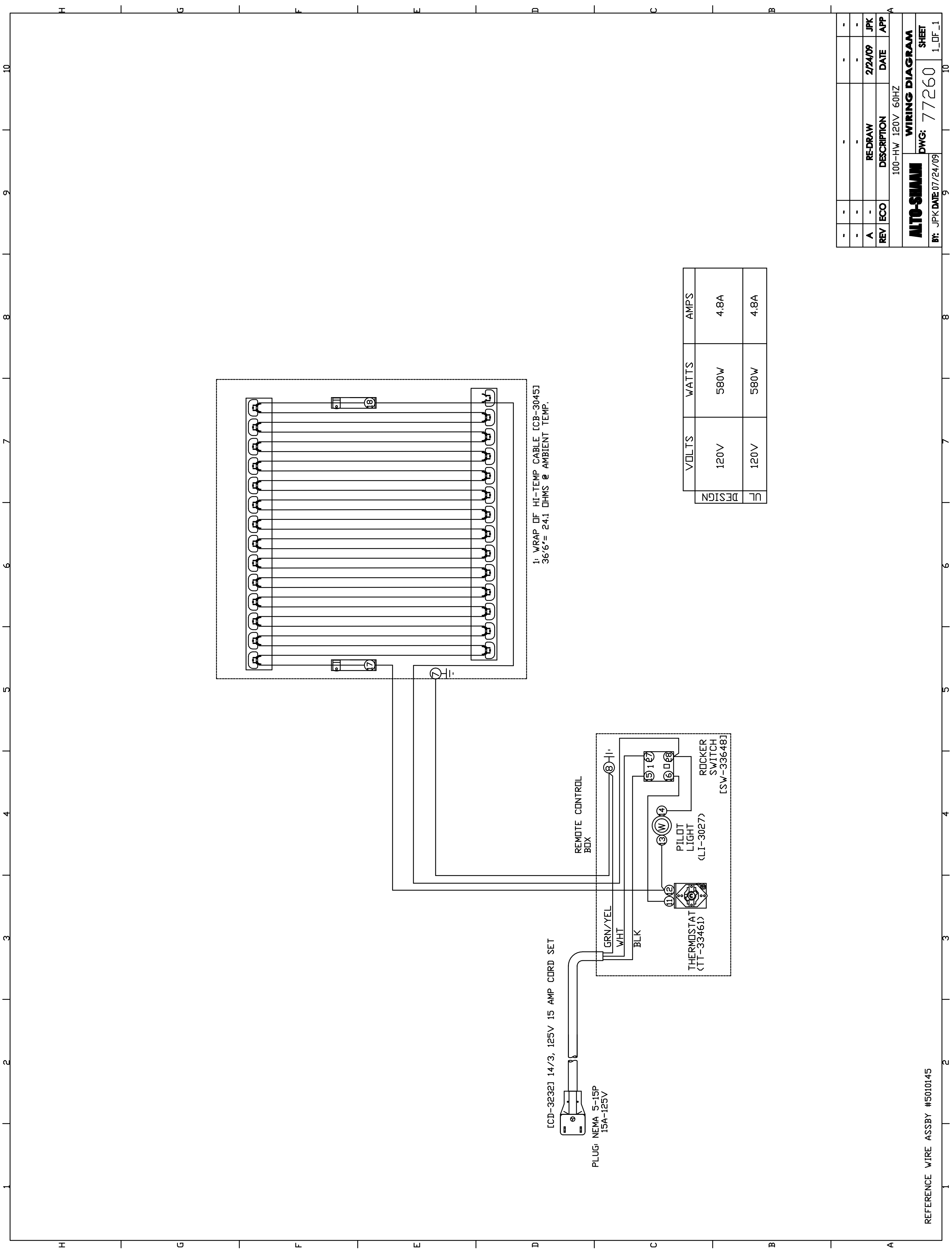
SERVICE PARTS

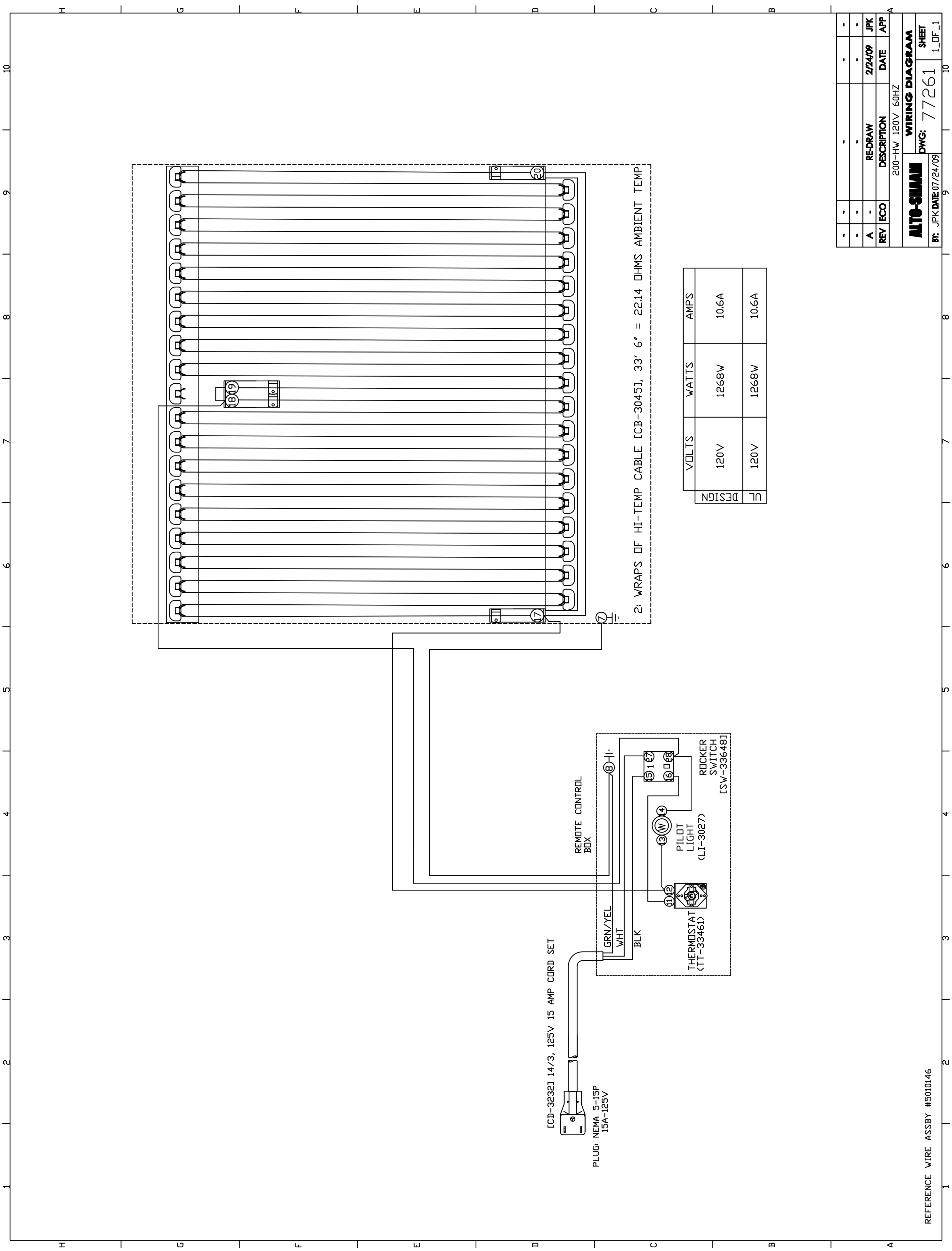
1	CD-3232	CORDSET, 14/3 SJTOW 125V
2	CD-33882	CORDSET, 230V, 16 AMP
3	CD-33840	CORDSET, 16/3, 250V 15A
4	CD-33367	CORDSET, 12/3, 125V, 30A
5	KN-3473	KNOB, THERMOSTAT
6	LI-3027	LIGHT, INDICATOR, 25OV
7	LI-3951	LIGHT, INDICATOR, 110V
8	SW-33648	SWITCH, ROCKER
9	SW-33923	SWITCH, ROCKER, 230V
10	TT-33461	THERMOSTAT, FAST
11	TT-3713	THERMOSTAT, BEZEL



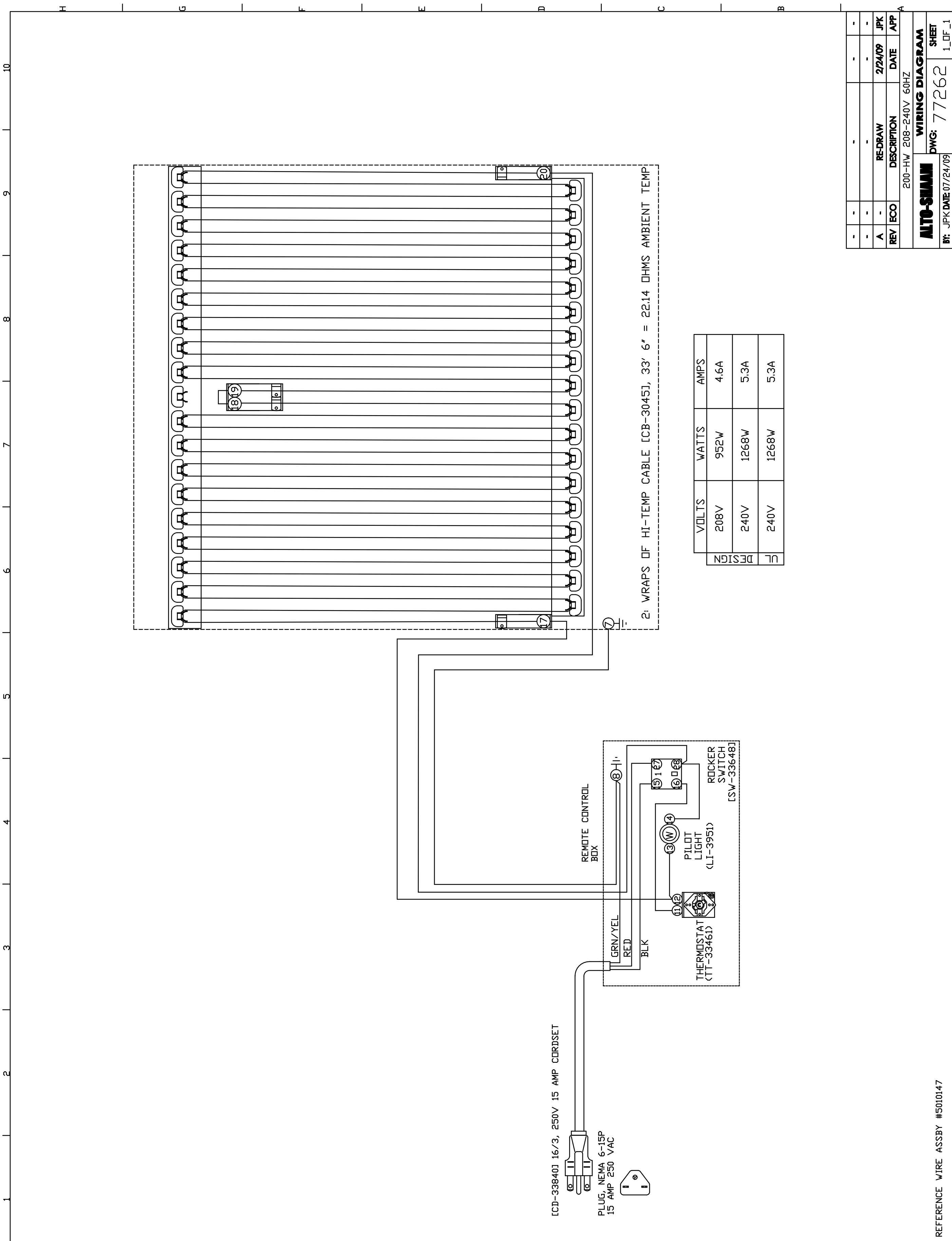
Cable Heating Replacement Service Kits

		100-HW	200-HW	300-HW	400-HW & 500-HW
	Kit Number	**4877**	**4878**	**4880**	**4881**
Service kit includes:					
CB-3045	Cable Heating Element	37 ft	67 ft	132 ft	144 ft
CR-3226	Ring Connector	2	4	8	12
IN-3488	Insulation Corner	8 ft	8 ft	8 ft	8 ft
BU-3105	Shoulder Bushing	2	4	8	12
BU-3106	Cup Bushing	2	4	8	12
SL-3063	Insulating Sleeve	2	4	8	12
TA-3540	High Temp Electrical Tape	1 roll	1 roll	1 roll	1 roll
ST-2439	10.32 Stud	2	4	8	12
NU-2215	Hex Nut	4	8	32	24

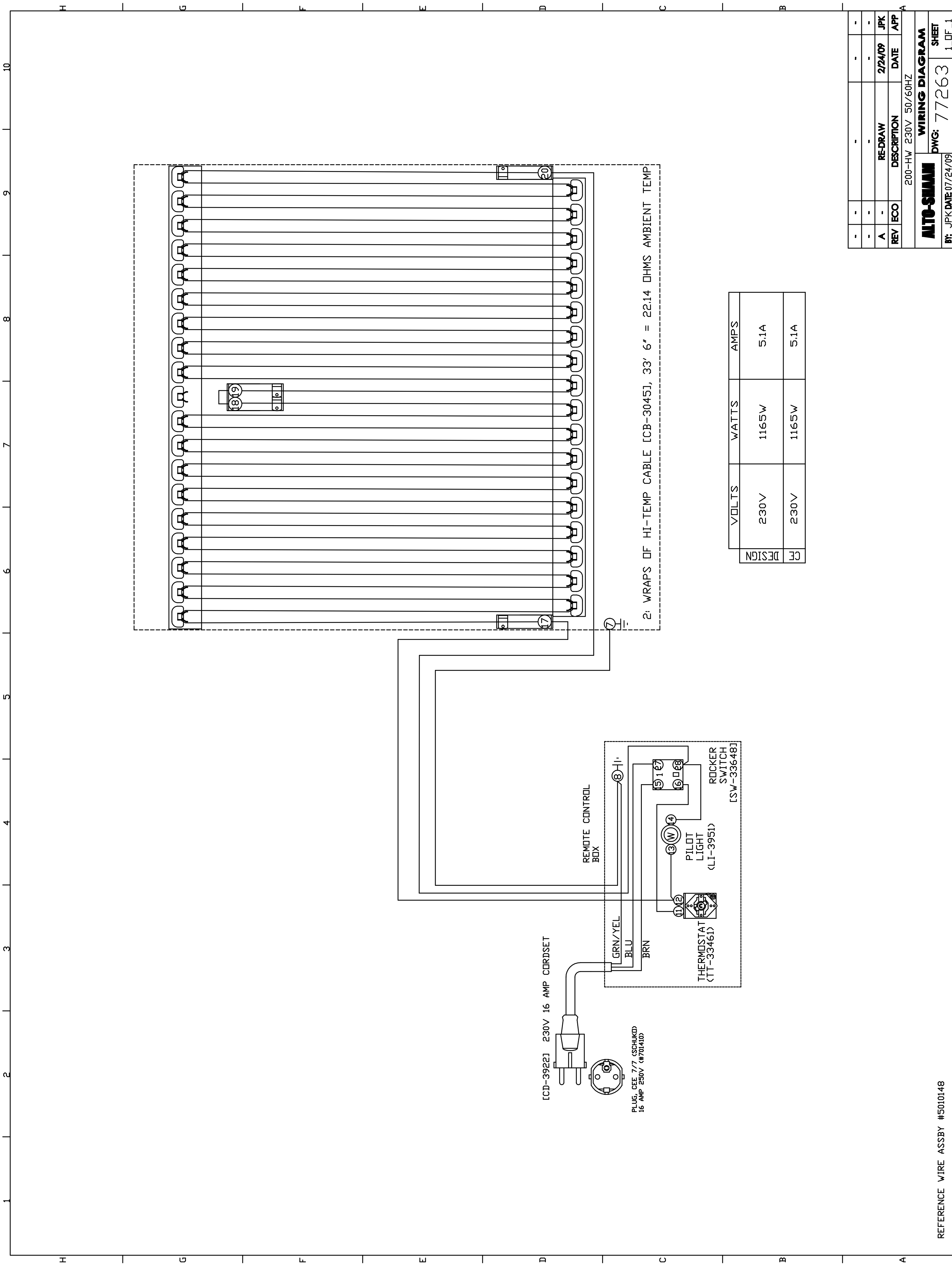

ALTO-SHAAM
WIRING DIAGRAM
100-HW 120V 60HZ
DWG: 77260
SHEET 1_OF_1
BY: JPK DATE 07/24/09
REV ECO DESCRIPTION DATE APP
A - RE-DRAW 2/24/09 JPK
DESIGN 120V 580W 4.8A
UL 120V 580W 4.8A
VOLTS WATTS AMPS
1: WRAP OF HI-TEMP CABLE [CB-30451]
36'6"= 24.1 OHMS @ AMBIENT TEMP.
REMOTE CONTROL BOX
ROCKER SWITCH [SW-33648]
PILOT LIGHT (LI-3027)
THERMOSTAT (TT-33461)
GRN/YEL
WHT
BLK
[CD-3232] 14/3, 125V 15 AMP CORD SET
PLUG: NEMA 5-15P 15A-125V
REFERENCE WIRE ASSBY #5010145

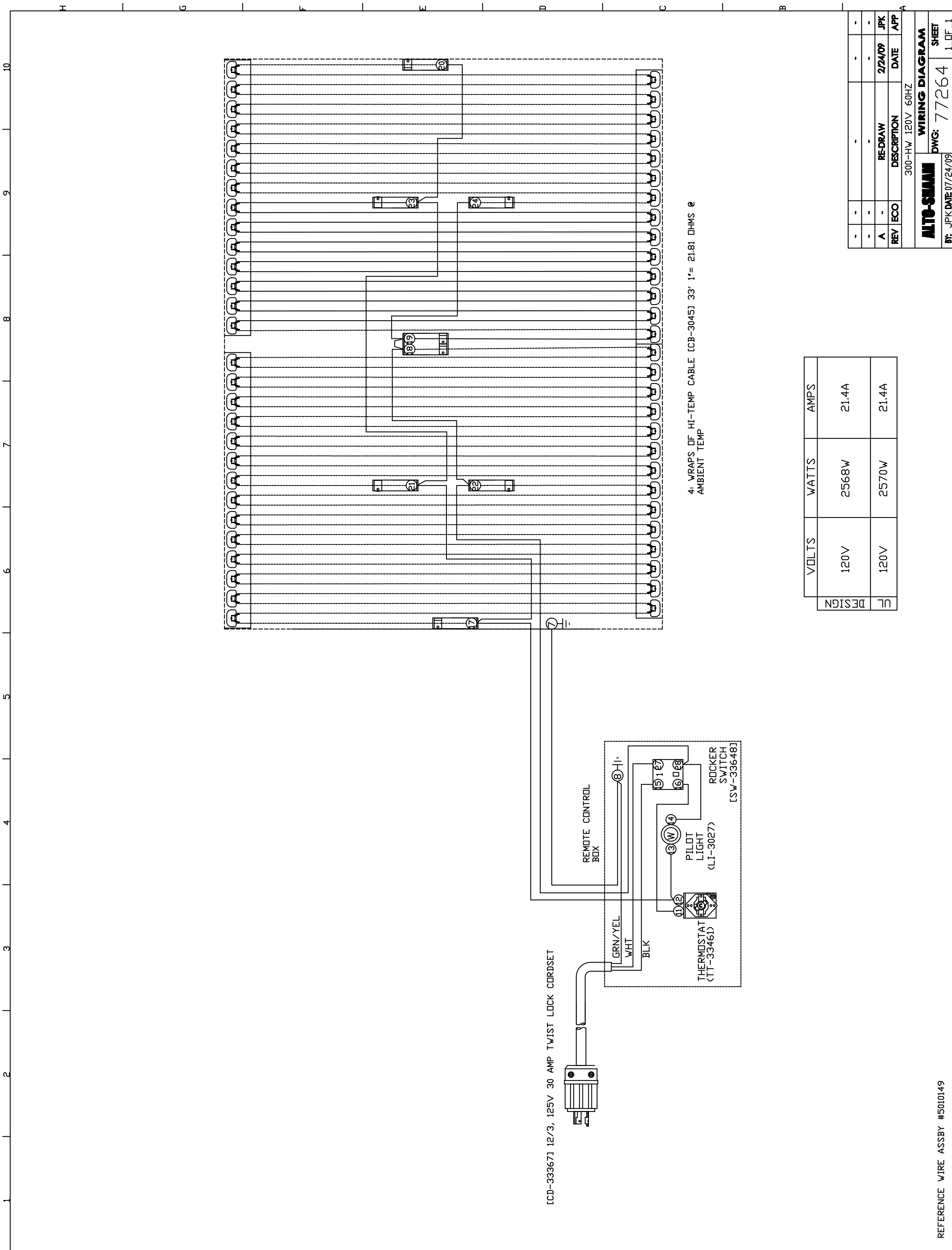


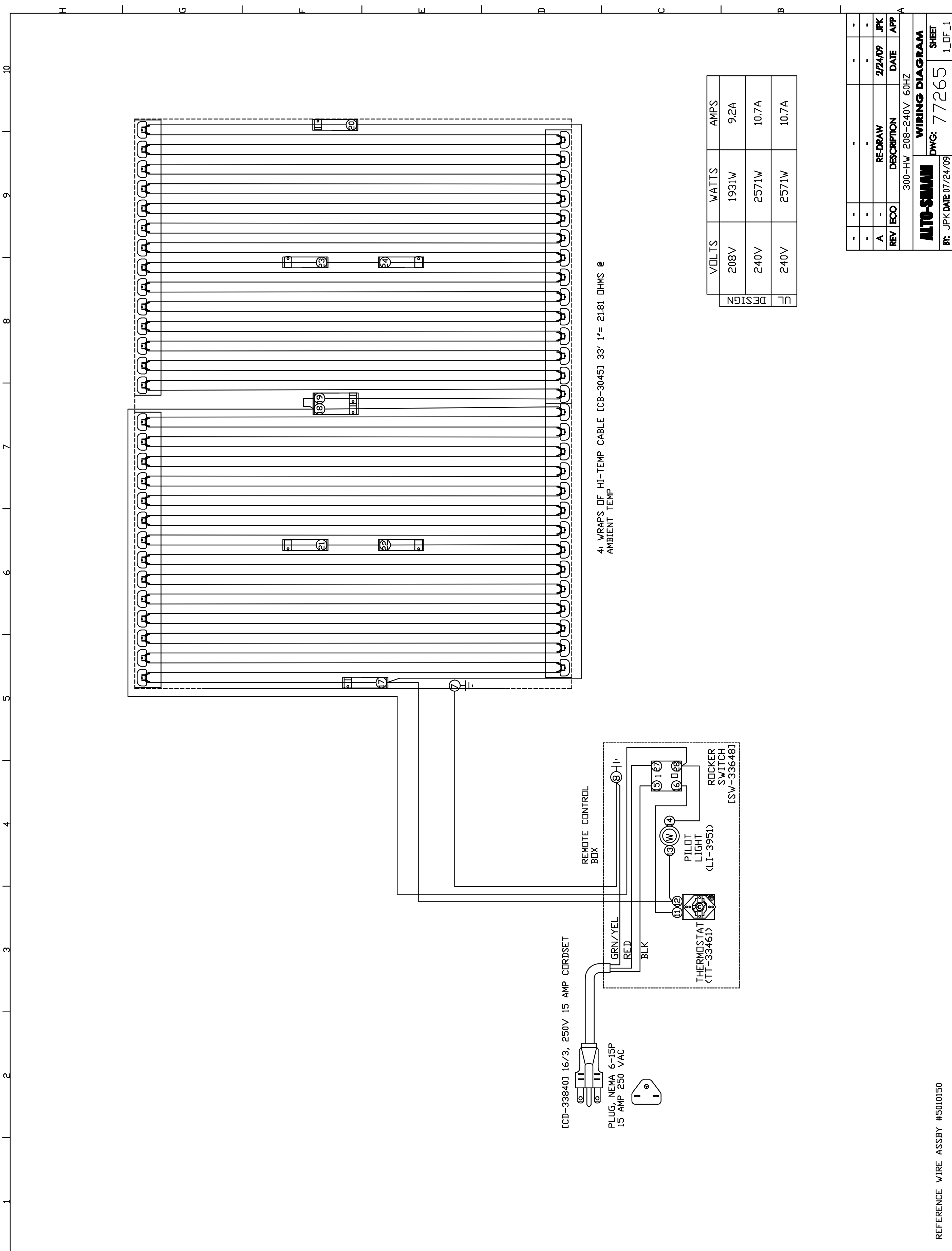
	VOLTS	WATTS	AMPS
DESIGN	120V	1268W	10.6A
UL	120V	1268W	10.6A

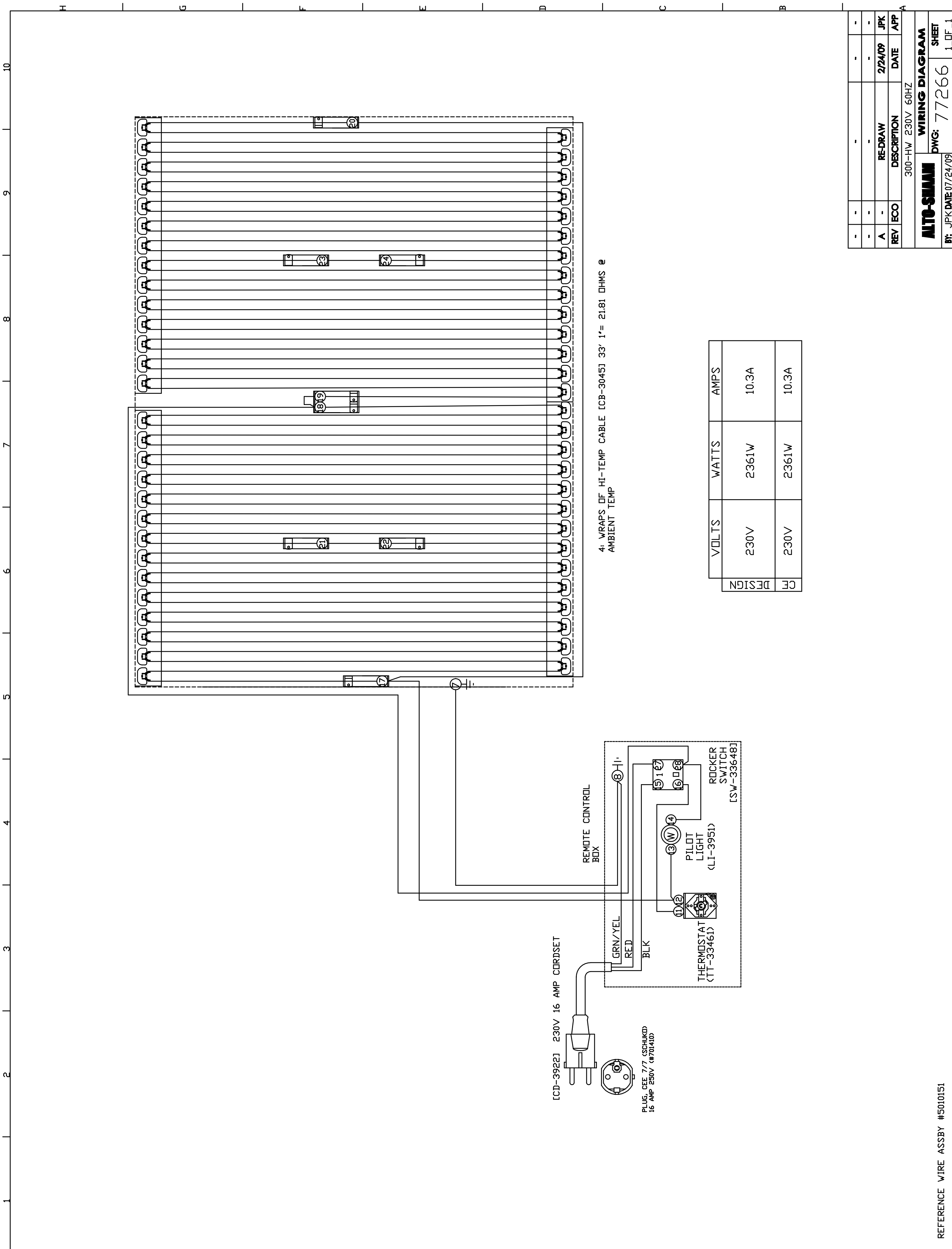


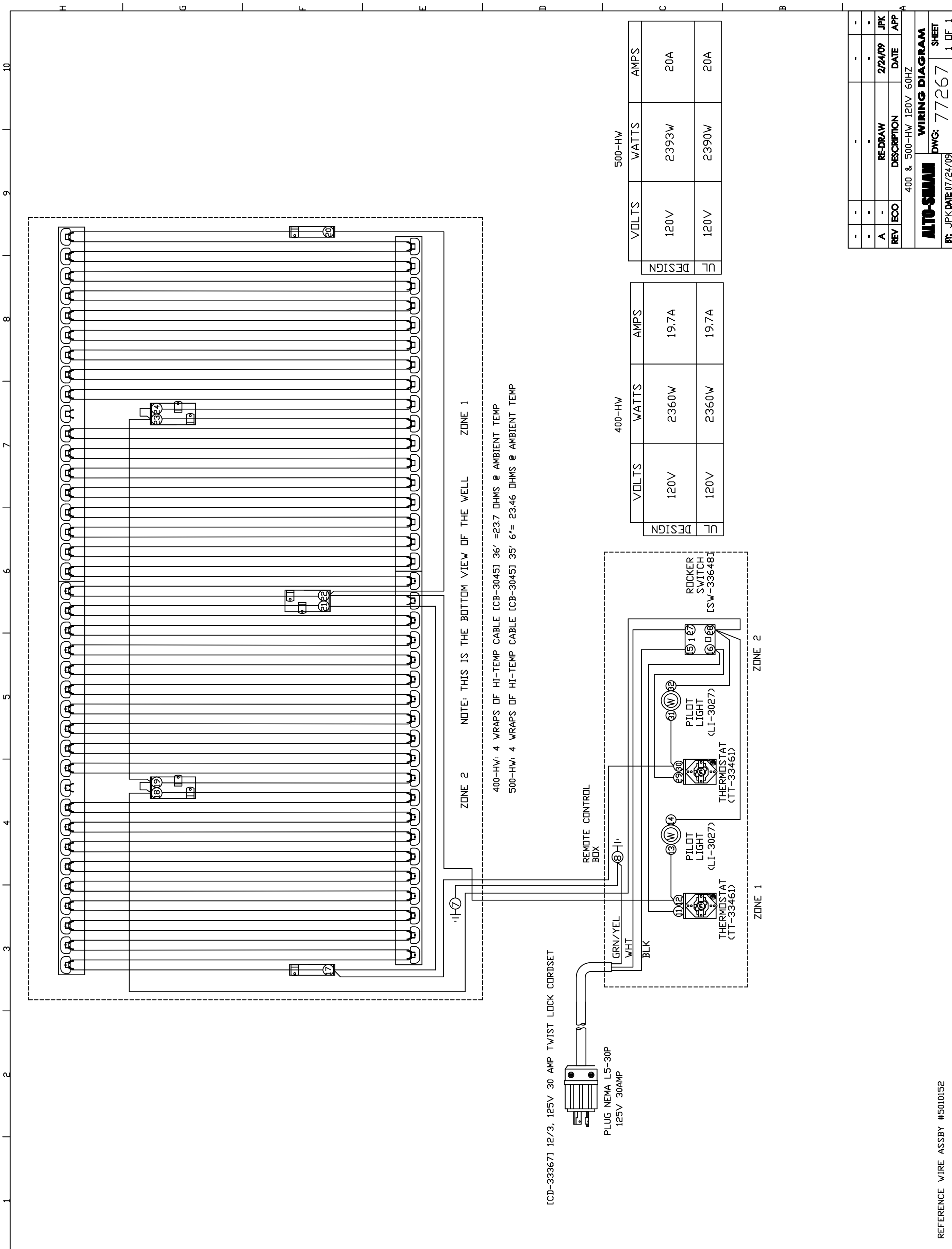
	VOLTS	WATTS	AMPS
DESIGN	208V	952W	4.6A
	240V	1268W	5.3A
UL	240V	1268W	5.3A

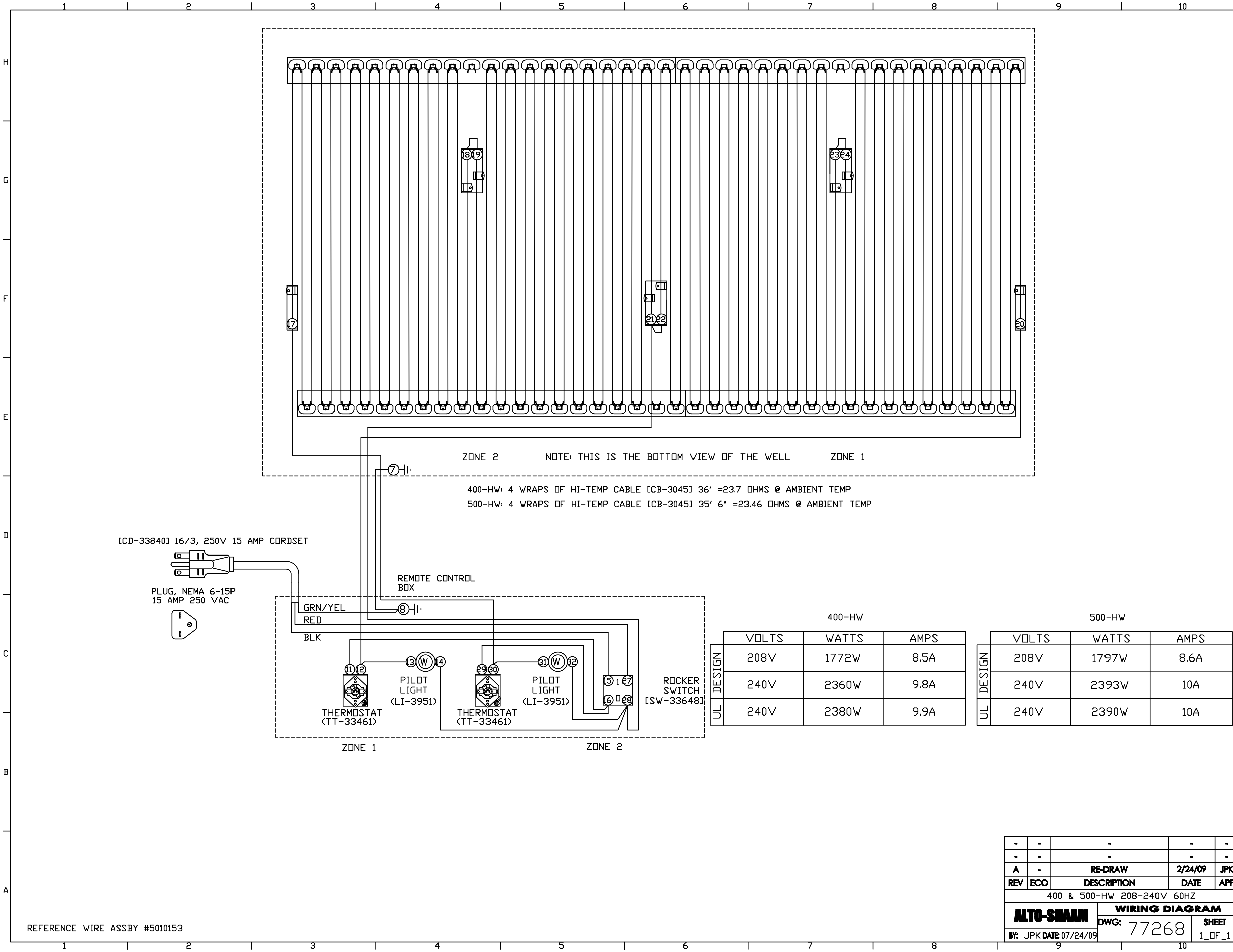

2: WRAPS OF HI-TEMP CABLE [CB-3045], 33' 6" = 22.14 OHMS AMBIENT TEMP
DESIGN
CE
VOLTS
230V
230V
WATTS
1165W
1165W
AMPS
5.1A
5.1A
REMOTE CONTROL BOX
ROCKER SWITCH [SW-33648]
PILOT LIGHT (LI-3951)
THERMOSTAT (TT-33461)
GRN/YEL
BLU
BRN
[CD-3922] 230V 16 AMP CORDSET
PLUG, CEE 7/7 (SCHUKO)
16 AMP 250V
REFERENCE WIRE ASSBY #5010148
A
RE-DRAW
2/24/09
JPK
REV
ECO
DESCRIPTION
DATE
APP
200-HW 230V 50/60HZ
ALTO-SHAAM
WIRING DIAGRAM
DWG: 77263
SHEET 1_OF_1
BY: JPK DATE 07/24/09


4: WRAPS OF HI-TEMP CABLE [CB-3045] 33' 1'= 21.81 OHMS @
AMBIENT TEMP
VOLTS | WATTS | AMPS
DESIGN | 120V | 2568W | 21.4A
UL | 120V | 2570W | 21.4A
REMOTE CONTROL
BOX
ROCKER
SWITCH
[SW-33648]
PILOT
LIGHT
(LI-3027)
THERMOSTAT
(TT-33461)
GRN/YEL
WHT
BLK
[CD-33367] 12/3, 125V 30 AMP TWIST LOCK CORDSET
REFERENCE WIRE ASSBY #5010149
A
RE-DRAW
2/24/09
JPK
REV
ECO
DESCRIPTION
DATE
APP
300-HW 120V 60HZ
ALTO-SHAAM
WIRING DIAGRAM
DWG: 77264
SHEET
1_OF_1
BY: JPK
DATE 07/24/09


ALTO-SHAAM
WIRING DIAGRAM
DWG: 77265
SHEET 1_OF_1
300-HW 208-240V 60HZ
A - RE-DRAW 2/24/09 JPK
REV ECO DESCRIPTION DATE APP
BY: JPK DATE 07/24/09
DESIGN 208V 1931W 9.2A
DESIGN 240V 2571W 10.7A
UL 240V 2571W 10.7A
VOLTS WATTS AMPS
4: WRAPS OF HI-TEMP CABLE [CB-3045] 33' 1'= 21.81 OHMS @ AMBIENT TEMP
REMOTE CONTROL BOX
ROCKER SWITCH [SW-33648]
PILOT LIGHT (LI-3951)
THERMOSTAT (TT-33461)
GRN/YEL
RED
BLK
[CD-33840] 16/3, 250V 15 AMP CORDSET
PLUG, NEMA 6-15P 15 AMP 250 VAC
REFERENCE WIRE ASSBY #5010150


4: WRAPS OF HI-TEMP CABLE [CB-3045] 33' 1"= 21.81 OHMS @ AMBIENT TEMP
DESIGN
VOLTS
WATTS
AMPS
230V
2361W
10.3A
CE
230V
2361W
10.3A
REMOTE CONTROL BOX
ROCKER SWITCH [SW-33648]
PILOT LIGHT (LI-3951)
THERMOSTAT (TT-33461)
GRN/YEL
RED
BLK
[CD-3922] 230V 16 AMP CORDSET
PLUG, CEE 7/7 (SCHUKO) 16 AMP 250V (#70141O)
REFERENCE WIRE ASSBY #5010151
REV
ECO
DESCRIPTION
DATE
APP
A
RE-DRAW
2/24/09
JPK
300-HW 230V 60HZ
ALTO-SHAAM
WIRING DIAGRAM
DWG: 77266
SHEET 1_OF_1
BY: JPK DATE 07/24/09


ZONE 2 NOTE: THIS IS THE BOTTOM VIEW OF THE WELL ZONE 1
400-HW: 4 WRAPS OF HI-TEMP CABLE [CB-3045] 36' =23.7 OHMS @ AMBIENT TEMP
500-HW: 4 WRAPS OF HI-TEMP CABLE [CB-3045] 35' 6"= 23.46 OHMS @ AMBIENT TEMP
REMOTE CONTROL BOX
GRN/YEL
WHT
BLK
[CD-33367] 12/3, 125V 30 AMP TWIST LOCK CORDSET
PLUG NEMA L5-30P
125V 30AMP
ROCKER SWITCH [SW-33648]
PILOT LIGHT (LI-3027)
THERMOSTAT (TT-33461)
PILOT LIGHT (LI-3027)
THERMOSTAT (TT-33461)
ZONE 2
ZONE 1
400-HW
DESIGN VOLTS 120V WATTS 2360W AMPS 19.7A
UL VOLTS 120V WATTS 2360W AMPS 19.7A
500-HW
DESIGN VOLTS 120V WATTS 2393W AMPS 20A
UL VOLTS 120V WATTS 2390W AMPS 20A
REV A ECO - RE-DRAW DATE 2/24/09 APP JPK
DESCRIPTION
400 & 500-HW 120V 60HZ
WIRING DIAGRAM
ALTO-SHAAM
DWG: 77267
SHEET 1 OF 1
BY: JPK DATE 07/24/09
REFERENCE WIRE ASSBY #5010152

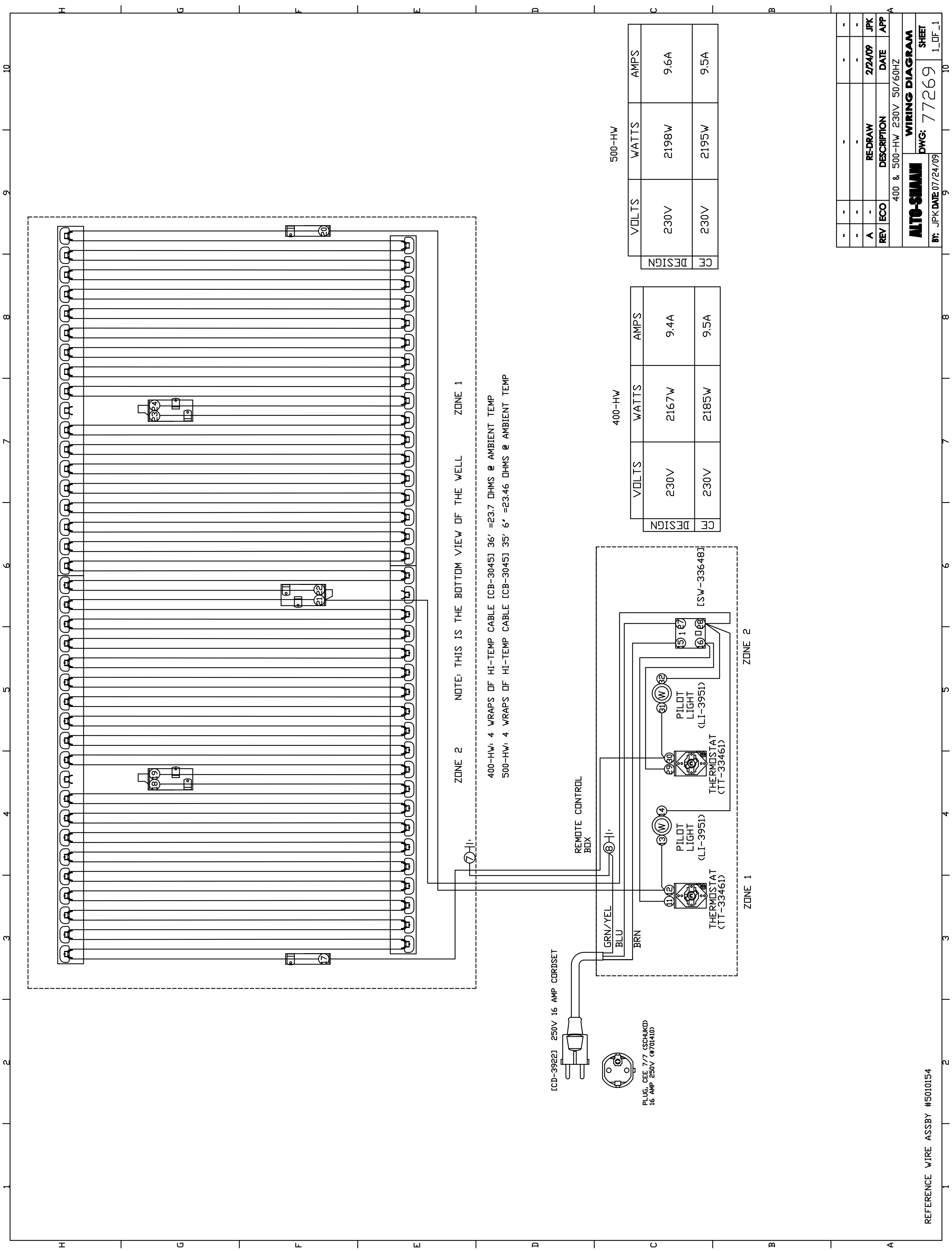


400-HW

	VOLTS	WATTS	AMPS
DESIGN	208V	1772W	8.5A
	240V	2360W	9.8A
UL	240V	2380W	9.9A

500-HW

	VOLTS	WATTS	AMPS
DESIGN	208V	1797W	8.6A
	240V	2393W	10A
UL	240V	2390W	10A


500-HW
VOLTS WATTS AMPS
DESIGN 230V 2198W 9.6A
CE 230V 2195W 9.5A
400-HW
VOLTS WATTS AMPS
DESIGN 230V 2167W 9.4A
CE 230V 2185W 9.5A
ZONE 2 NOTE: THIS IS THE BOTTOM VIEW OF THE WELL ZONE 1
400-HW: 4 WRAPS OF HI-TEMP CABLE [CB-3045] 36' =23.7 OHMS @ AMBIENT TEMP
500-HW: 4 WRAPS OF HI-TEMP CABLE [CB-3045] 35' 6" =23.46 OHMS @ AMBIENT TEMP
REMOTE CONTROL BOX
[SW-33648]
ZONE 2
PILOT LIGHT (LI-3951)
THERMOSTAT (TT-33461)
PILOT LIGHT (LI-3951)
THERMOSTAT (TT-33461)
ZONE 1
GRN/YEL
BLU
BRN
[CD-3922] 250V 16 AMP CORDSET
PLUG, CEE 7/7 (SCHUKO) 16 AMP 250V (#701410)
REFERENCE WIRE ASSBY #5010154
A RE-DRAW 2/24/09 JPK
REV ECO DESCRIPTION DATE APP
400 & 500-HW 230V 50/60HZ
ALTO-SHAAM WIRING DIAGRAM
BY: JPK DATE 07/24/09 DWG: 77269 SHEET 1_OF_1

TRANSPORTATION DAMAGE and CLAIMS



All Alto-Shaam equipment is sold F.O.B. shipping point, and when accepted by the carrier, such shipments become the property of the consignee.

Should damage occur in shipment, it is a matter between the carrier and the consignee. In such cases, the carrier is assumed to be responsible for the safe delivery of the merchandise, unless negligence can be established on the part of the shipper.

1. Make an immediate inspection while the equipment is still in the truck or immediately after it is moved to the receiving area. Do not wait until after the material is moved to a storage area.

2. Do not sign a delivery receipt or a freight bill until you have made a proper count and inspection of all merchandise received.

3. Note all damage to packages directly on the carrier's delivery receipt.

4. Make certain the driver signs this receipt. If he refuses to sign, make a notation of this refusal on the receipt.

5. If the driver refuses to allow inspection, write the following on the delivery receipt:
   Driver refuses to allow inspection of containers for visible damage.

6. Telephone the carrier's office immediately upon finding damage, and request an inspection. Mail a written confirmation of the time, date, and the person called.

7. Save any packages and packing material for further inspection by the carrier.

8. Promptly file a written claim with the carrier and attach copies of all supporting paperwork.

We will continue our policy of assisting our customers in collecting claims which have been properly filed and actively pursued. We cannot, however, file any damage claims for you, assume the responsibility of any claims, or accept deductions in payment for such claims.

ALTO-SHAAM LIMITED WARRANTY

Alto-Shaam, Inc. warrants to the original purchaser only that any original part that is found to be defective in material or workmanship will, at Alto-Shaam's option, subject to provisions hereinafter stated, be replaced with a new or rebuilt part.

The parts warranty period is as follows:

For the refrigeration compressor on Alto-Shaam Quickchillers™, five (5) years from the date of installation.

For the heating element on Halo Heat® cook/hold ovens, as long as the original purchaser owns the oven.

For all other parts, one (1) year from the date of installation or fifteen (15) months from the shipping date, whichever occurs first.

The labor warranty period is one (1) year from the date of installation or fifteen (15) months from the shipping date, whichever occurs first.

Alto-Shaam will bear normal labor charges performed during standard business hours, excluding overtime, holiday rates or any additional fees.

To be valid, a warranty claim must be asserted during the applicable warranty period. This warranty is not transferable.

THIS WARRANTY DOES NOT APPLY TO:

1. Calibration.
2. Replacement of light bulbs and/or the replacement of display case glass due to damage of any kind.
3. Equipment damage caused by accident, shipping, improper installation or alteration.
4. Equipment used under conditions of abuse, misuse, carelessness or abnormal conditions, including but not limited to, equipment subjected to harsh or inappropriate chemicals, including but not limited to, compounds containing chloride or quaternary salts, poor water quality, or equipment with missing or altered serial numbers.
5. Damage incurred as a direct result of poor water quality, inadequate maintenance of steam generators and/or surfaces affected by water quality. Water quality and required maintenance of steam generating equipment is the responsibility of the owner/operator.
6. Damage caused by use of any cleaning agent other than Alto-Shaam's Combitherm® Cleaner, including but not limited to damage due to chlorine or other harmful chemicals. **Use of Alto-Shaam's Combitherm® Cleaner on Combitherm® ovens is highly recommended.**
7. Any losses or damage resulting from malfunction, including loss of product or consequential or incidental damages of any kind.
8. Equipment modified in any manner from original model, substitution of parts other than factory authorized parts, removal of any parts including legs, or addition of any parts.

This warranty is exclusive and is in lieu of all other warranties, express or implied, including the implied warranties of merchantability and fitness for a particular purpose. In no event shall Alto-Shaam be liable for loss of use, loss of revenue or profit, or loss of product, or for any indirect, special, incidental, or consequential damages. No person except an officer of Alto-Shaam, Inc. is authorized to modify this warranty or to incur on behalf of Alto-Shaam any other obligation or liability in connection with Alto-Shaam equipment.

ALTO-SHAAM, INC.

Effective 02/09

RECORD THE MODEL AND SERIAL NUMBER OF THE APPLIANCE FOR EASY REFERENCE.
ALWAYS REFER TO BOTH MODEL AND SERIAL NUMBER IN ANY CONTACT WITH ALTO-SHAAM REGARDING THIS APPLIANCE.

Model: ____________________ Date Installed: ____________________
Voltage: ____________________ Purchased From: ____________________
Serial Number: ____________________ ____________________

W164 N9221 Water Street • P.O. Box 450 • Menomonee Falls, Wisconsin 53052-0450 • U.S.A.
PHONE: 262.251.3800 • 800.558-8744 USA/CANADA FAX: 262.251.7067 • 800.329.8744 U.S.A. ONLY
www.alto-shaam.com

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